What is claimed is:

1. A bipolar interconnection plate for placement between fuel cell units in a fuel cell stack having multiple fuel cell units to form a power generation system, each fuel cell unit including an anode member, a cathode member, and a portion of electrolyte material positioned between the anode member and the cathode member, the bipolar interconnection plate comprising:

(a) a generally planar support member having opposing first side and second side surfaces;

(b) an elongate channel and lands adjacent thereto defined on the first side surface of the support member;

(c) an elongate channel and lands adjacent thereto defined on the second side surface of the support member; and

(d) a heat pipe disposed in the planar support member for receiving and distributing heat in the fuel cell stack.

2. A bipolar interconnection plate as recited in Claim 1, wherein the heat pipe is substantially embedded in one of the lands defined on either the first side surface or the second side surface.

3. A bipolar interconnection plate as recited in Claim 1, wherein a first heat pipe is embedded within one of the lands on the first side surface and a second heat pipe is embedded within one of the lands on the second side surface.

4. A bipolar interconnection plate as recited in Claim 1, further comprising a plurality of elongate channels defining a longitudinal array of lands adjacent thereto on the first side surface and a plurality of elongate channels defining a longitudinal array of lands adjacent thereto on the second side surface.

5. A bipolar interconnection plate as recited in Claim 4, further comprising a heat pipe embedded in each of the longitudinal lands defined by the plurality of elongate channels on the first side surface and a heat pipe embedded in each of the longitudinal lands defined by the plurality of elongate channels on the second side surface.

6. A bipolar interconnection plate as recited in Claim 5, wherein the plurality of elongate channels and array of longitudinal lands with embedded heat pipes on the first side of the support member and the plurality of elongate channels and array of longitudinal lands with embedded heat pipes on the second side of the support member are in a perpendicular relationship with respect to each other.

7. A bipolar interconnection plate as recited in Claim 6, wherein the heat pipes extend substantially the length of the support member.

8. A bipolar interconnection plate as recited in Claim 1, wherein the elongate channel is substantially U-shaped.

9. A bipolar interconnection plate as recited in Claim 1, wherein the heat pipe contains a working fluid that comprises liquid metal.

10. A fuel cell stack including multiple fuel cell units forming a power generation system, wherein each fuel cell unit includes an anode member, a cathode member, and a portion of electrolyte material positioned between the anode member and the cathode member, and a bipolar interconnection plate for placement between at least one pair of adjacent fuel cell units in the fuel cell stack, the bipolar interconnection plate comprising:

(a) a generally planar support member having opposing first side and second side surfaces;

(b) a plurality of elongate channels and lands defined adjacently thereto on the first side surface of the support member;

(c) a plurality of elongate channels and lands defined adjacently thereto on the second side surface of the support member; and

(d) a first heat pipe disposed within at least one of the lands of the first side of the support member and a second heat pipe disposed within at least one of the lands of the second side of the support member for receiving and distributing heat within the fuel cell stack.

11. A fuel cell stack as recited in Claim 10, wherein the lands and channels on the first side surface are defined substantially perpendicular with respect to the lands and channels on the second side surface.

12. A fuel cell stack as recited in Claim 11, further comprising a heat pipe disposed within each of the lands of the first side of the support member and a heat pipe disposed within each of the lands of the second side of the support member.

13. A fuel cell stack as recited in Claim 10, wherein the heat pipe is substantially embedded in the support member.

14. A fuel cell stack as recited in Claim 10, wherein the bipolar interconnection plate is placed between each fuel cell unit.

15. A method for constructing a bipolar interconnection plate comprising the steps of:

(a) providing a machined bipolar interconnection plate comprising:

(i) a planar support member having opposing first side and second side surfaces;

(ii) an array of elongate channels and lands adjacent thereto defined on the first side surface of the support member;

(iii) an array of elongate channels and lands adjacent thereto defined on the second side surface of the support member;

(b) forming a bore through the support member in the area of at least one of the lands on the first side of the support member; and

(c) securing a heat pipe within the bore.

16. The method according to Claim 15, further comprising the steps of:

(d) forming a bore through the support member in the area of at least one of the lands on the second side of the support member; and

(e) securing a heat pipe within the bore.

17. The method according to Claim 16, further comprising the step of"

(f) sealing the heat pipes within the bores with a highly thermally conductive epoxy.

18. The method according to Claim 15, wherein the step of forming a bore through the support member in the area of at least one of the lands on the first side of the support member comprises laser drilling the bore.